Environmental Product Declaration

In accordance with ISO 14025 and EN 15804 for:

Raw birch plywood (Riga Ply) with lignin based glue RIGA ECOlogical

from:

AS Latvijas Finieris

Programme:	The International EPD® System, www.environdec.com
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Programme information

Programme:	The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com info@environdec.com

Product category rules (PCR): *PCR 2012:01 Construction products and construction services, Version 2.31* *Sub-PCR-E to PCR 2012:01: Wood and wood-based products for use in construction, Version 2019-12-20, UN CPC 031, 311-316, 319*
PCR review was conducted by: The Technical Committee of the International EPD® System. The review panel may be contacted via info@environdec.com.
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☒ EPD verification
Third party verifier: *Camilla Landén and Anders Nordenlöf at Bureau Veritas Certification Sweden* Approved by: SWEDAC, Swedish accreditation body
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

Company information

Owner of the EPD

AS Latvijas Finieris (Address: Bauskas street 59, Riga LV-1004, Latvia; Phone: +371 67067207; E-mail: info@finieris.lv; web: www.finieris.com)

Description of the organisation

AS Latvijas Finieris is a private joint stock company. Together with numerous subsidiary companies, it forms the multi-sectoral Latvijas Finieris Group. The key operational area of Latvijas Finieris is the production and sale of birch plywood under the brand RIGA, the development of new birch plywood products and the supply of related services. Birch veneer and plywood production facilities are located in Latvia, Lithuania, Estonia and Finland.
Other key activities of the Group include a birch nursery, re-planting, forestry and logging, the production of synthetic resins, phenol films and wood-plastic composite overlays, as well as the purchase and distribution of complementary panel products. The company is also active in machinery manufacture. Overall, the Group provides work to an average of 2,500 employees and a further 2,000 in the wider community.

Our Vision:
To be the global leader of performance oriented birch plywood based product solutions.

Our Mission:
To enable customers, forest owners, cooperation partners, employees and other stakeholders of the company to develop long-term partnerships: accountable work ethics, accountable profits and responsible investments.

Our Conviction:
Plywood products are and will remain among the most beneficial industrial uses of birch wood, at the same time other birch-based products will play an increasing role in the development of the bio economy.

Our Values:
SAFETY. We create a safe environment and act in a sustainable manner.
RESPECT. We respect each other and promote honesty, loyalty and mutual trust.
DEVELOPMENT. We strive for self-improvement and encourage the growth of others.
LEADERSHIP. We are the owners of our work, we take initiative to get job done.

Latvijas Finieris around the World:
The origins of Latvijas Finieris can be traced back to a small woodworking factory established in 1873 where the production of plywood using a hydraulic press was launched for the first time in Latvia during 1909. Today our products are sold in 70 countries worldwide.
Our network of 12 fully owned Riga Wood product development and sales offices provide Europe, key areas in Asia, North and South America as well as the middle East, with direct and professional contact from our plywood experts. Riga Wood Sales Offices are located in Latvia, Sweden, Finland, France, the Netherlands, Germany, the United Kingdom, Spain, Italy, the United States, Turkey and Japan. The core competence of the Latvijas Finieris Group is birch-based products, focusing on excellence in birch plywood production. Latvijas Finieris is convinced that plywood production is, and will remain, one of the most beneficial industrial uses of birch wood, which presents considerable development opportunities for the long term and will ensure core business profitability.

The growing potential of the bio-economy calls for a constant, proactive attitude towards birch together with other wood based products in general and how their technical and commercial attributes can utilise Latvijas Finieris core competence in birch products. Our strong marketing, sales, and product development services are a key factor in our ability and willingness to develop into new areas.

Compliance with EU Regulations. Product related certifications:

Regulation – Certification - Standard	
Class E1 EN 13986+A1	V
CARB Phase 2 and EPA TSCA Title VI	On request
EU REACH Regulation 1907/2006	V
EU RoHS Directive 2011/65/EC	V
EU Construction Products Regulation 305/2011 CE 2+; CE 4	Structural use
EU Timber Regulation 995/2010	V
FSC wood supply chain	On request
PEFC wood supply chain	On request

Birch plywood RIGA® contributes toward satisfying Credit IEQ 4.4 under LEED®

It meets the testing requirements and is compliant with the US Environmental Protection Agency Toxic Substances Control Act (TSCA) Title VI and the California Air Resource Board (CARB) Airborne Toxic Control Measure (ATCM) Final Regulation Order (FRO) § 93120.2 (a) table 1.
Birch plywood RIGA® manufactured from timber with only legal origin and complying with sustainable forest management principles. It is supplied with either FSC® or PEFC® certification, thereby contributing toward the MR 7 certified wood credit for LEED project works.

Location of our production sites

Birch veneer mills:

- Likmere in Ukmergė, Lithuania (A1)
- Sastamala mill in Sastamala, Finland (A1)

Birch plywood mills:

- Lignums in Riga, Latvia (A3)
- Furniers in Riga, Latvia (A3)
- Verems in Rezekne county, Latvia (A3)
- Kohila Vineer in Kohila, Estonia (A3)

Birch plywood further processing units:

- Hapaks in Riga, Latvia (A3)
- Troja in Riga, Latvia (A3)

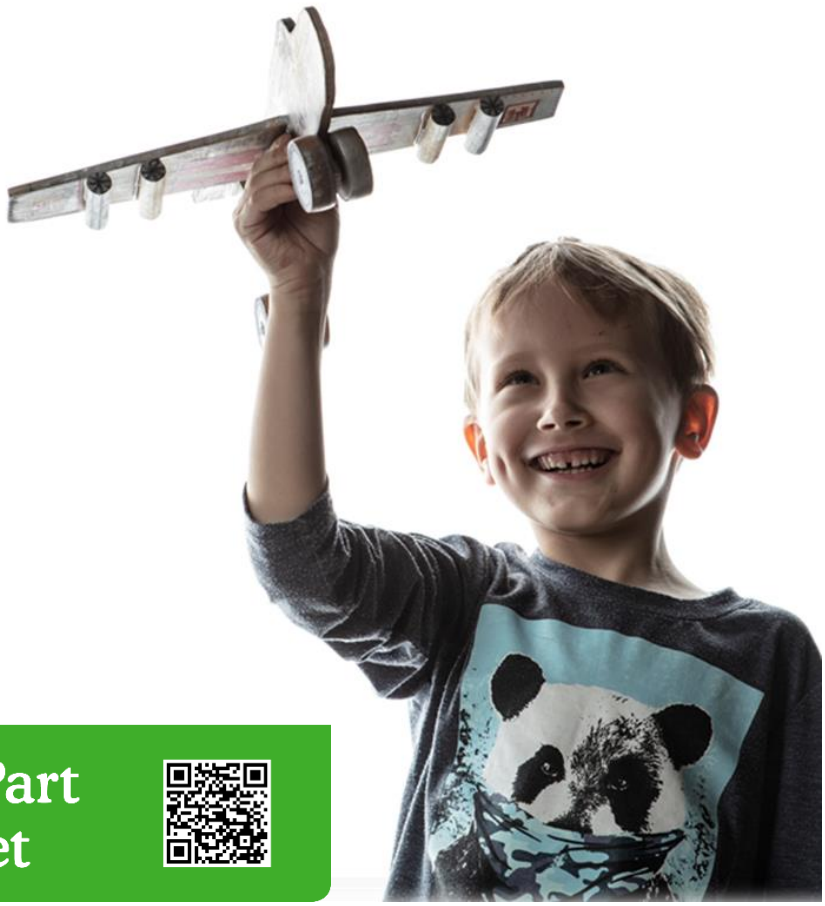
Product information

Raw birch plywood (Riga Ply) with lignin based glue RIGA ECOlogical

Latvijas Finieris has developed for its well-known RIGA Birch Plywood a new Green Glue RIGA ECOlogical, where Bio-Based Renewable Lignin to a significant extent is used as replacement of the traditional Fossil Phenol. All technical properties of RIGA Plywood remain unchanged when the environmentally friendly glue is applied. The carbon footprint of RIGA Plywood is reduced from production to all its end-uses, offering to all RIGA customers a significant competitive advantage in the increasingly green business environment.

All Woods contain 20-30% of Lignin, a polymeric substance which together with Cellulose forms the woody cell walls of trees and binds together the wood fibers and cells. This strong and rigid structure allows the trees to stand and grow upright. Industrial Lignin is usually extracted from wood as a powderous by-product in chemical "Kraft" Pulp production. Still until the 2000's, the main use of Lignin has been energy production by burning, with calorific values comparable to carbon.

Lignin is a recyclable and ecologically friendly product, abundantly available in the entire world in trees and plants. Therefore, it has recently become important subject to active research, to develop new and more sophisticated uses for it. This rising technological wave with most promising results belongs today to the World's Megatrends. RIGA ECOlogical is one of them.



LCA information

Functional unit / declared unit

Declared unit of 1m^3 of plywood.

Reference service life

No reference service life is relevant due to the scope of the system boundaries.

Time representativeness for specific data

2018

Database(s) and LCA software used

Databases: Ecoinvent, ELCD
LCA Software: SimaPro

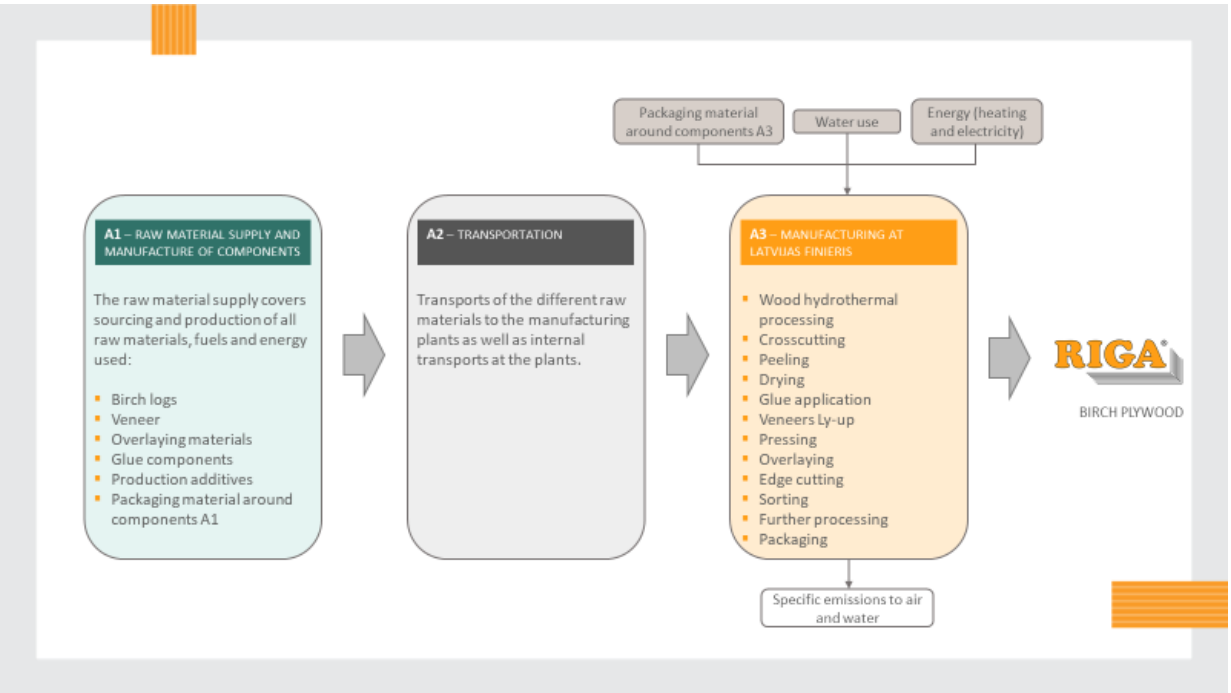
Description of system boundaries

This EPD comprises the Product stage (Cradle-to-Gate) of the LCA

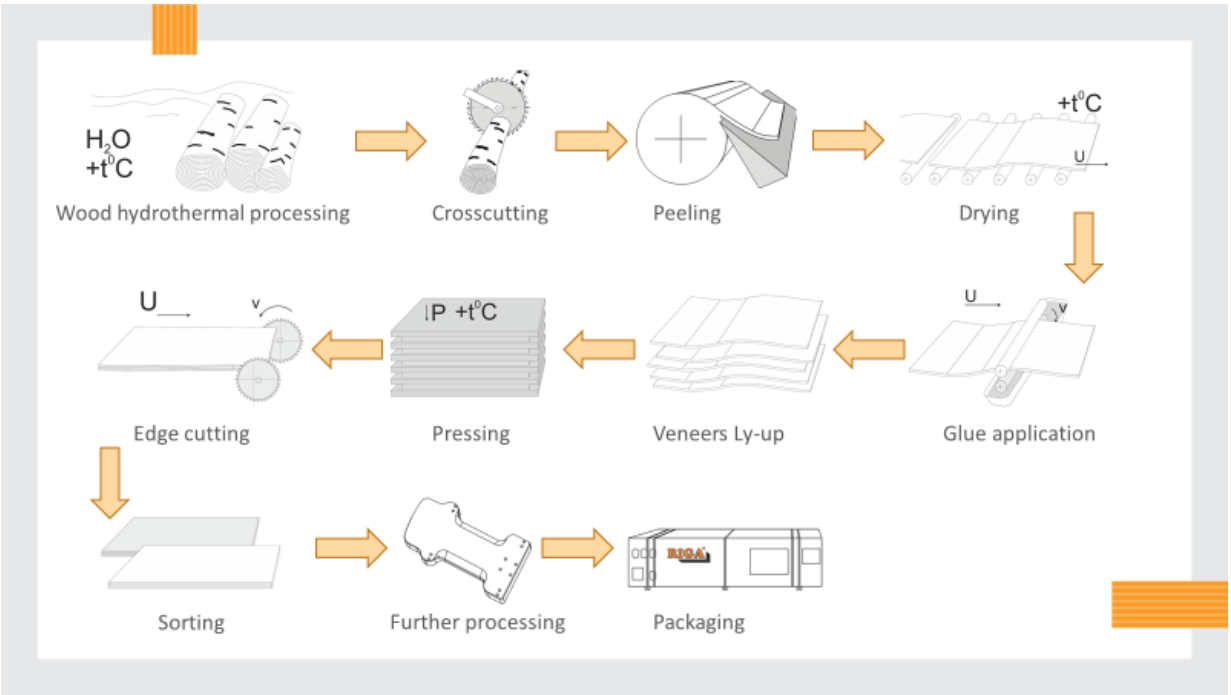
Product stage			Construction / installation stage		Use stage							End of life stage				Benefits and loads beyond the system boundary
Raw material supply	Transportation	Manufacturing	Transportation	Construction / installation / assembly	Use	Maintenance (incl. transportation)	Repair (incl. transportation)	Replacement (incl. transportation)	Refurbishment (incl. transportation)	Operational energy use	Operational water use	De-installation / demolition / disassembly	Transportation	Waste processing	Disposal	Reuse / recovery / recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
x	x	x	MND	MND	MNR	MND	MND	MND	MNR	MNR	MNR	MND	MND	MND	MND	MND

X – included MNR – not relevant MND – not declered

System diagram



The product stage of the LCA constitute of modules A1-A3.
Module A1 encompasses the extraction and refinement of raw materials as well as production of components by the suppliers of Latvijas Finieris. In some cases (veneer, resin and phenolic film production) the production of the materials in A1 are done close to the site of the manufacturing unit for A3. Transports of the main components, from suppliers to Latvijas Finieris core production unit, are included in the A2 module. The internal transports between the production processes before the core manufacturing processes of A3 is also accounted for in the A2 module.
The box “Manufacturing at Latvijas Finieris” represents the A3 module, where the components of the panel wall are assembled, and the plywood products are produced:



Content declaration

Product

Composition of Raw Birch Plywood with lignin based glue RIGA ECOlogical, % (represents all thickness range)	
Wood	90,4
RIGA ECOlogical Resins	6,4
Powder extender - Hardener	2,4
Overlays, composite materials	0
Other	0,8

Release of dangerous substances to indoor air, soil and water
Product Categories Rules PCR 2012:01 9.2.6

Birch plywood under the trade name RIGA® is manufactured by application of chemicals fulfilling requirements of REACH registration, including requirements of REACH Annex XVII "Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles". Regardless of formaldehyde, being significantly below indicated limit values, RIGA® birch plywood does not contain any substances listed in both the REACH Annex for prohibited hazardous substances and the Candidate List of Substances of Very High Concern for Authorization.

Packaging

Distribution packaging: The packaging materials used to transport the materials from the production units of Latvijas Finieris consist of the materials presented in table below.

Components	Material	Weight (kg/DU Raw birch plywood with lignin-based glue)
Wooden pallet	Wood	14,3
Plastic film	Low density polyethylene	0,13
Plastic wraps	PET	0,21
Paper packaging	Corrugated board box	1,01
Steel tape	Steel	0,01

Recycled material

Provenance of recycled materials (pre-consumer or post-consumer) in the product: The plastics, paper and steel waste materials arising from the core production are recycled.

Environmental performance

Potential environmental impact

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
Global warming potential (GWP)	kg CO_2 eq.	2,86E+02	3,50E+01	2,91E+02	6,12E+02
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC 11 eq.	3,91E-05	6,95E-06	7,28E-06	5,33E-05
Acidification potential (AP)	kg SO_2 eq.	2,14E-01	5,60E-03	1,24E-01	3,44E-01
Eutrophication potential (EP)	kg PO_4^{3-} eq.	1,45E+00	1,13E-01	1,76E+00	3,33E+00
Formation potential of tropospheric ozone (POCP)	kg C_2H_4 eq.	4,40E-01	2,49E-02	3,66E-01	8,31E-01
Abiotic depletion potential – Elements	kg Sb eq.	7,75E-04	6,80E-05	9,60E-05	9,39E-04
Abiotic depletion potential – Fossil resources	MJ, net calorific value	3,97E+03	5,54E+02	2,12E+03	6,65E+03

Use of resources

PARAMETER		UNIT	A1	A2	A3	TOTAL A1-A3
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	3,94E+04	9,91E+00	6,24E+02	4,00E+04
	Used as raw materials	MJ, net calorific value	1,20E+04	0,00E+00	0,00E+00	1,20E+04
	TOTAL	MJ, net calorific value	5,14E+04	9,91E+00	6,24E+02	5,20E+04
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	5,96E+02	4,48E+03	2,33E+03	7,40E+03
	Used as raw materials	MJ, net calorific value	9,20E+00	0,00E+00	0,00E+00	9,20E+00
	TOTAL	MJ, net calorific value	6,05E+02	4,48E+03	2,33E+03	7,41E+03
Secondary material		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water		m^3	3,65E+02	0,00E+00	6,20E+01	4,27E+02

Waste production and output flows

Waste production:

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
Hazardous waste disposed	kg	1,09E-02	2,88E-04	1,94E+00	1,95E+00
Non-hazardous waste disposed	kg	1,17E+02	4,91E+01	1,42E+01	1,80E+02
Radioactive waste disposed	kg	2,26E-02	4,01E-03	1,43E-03	2,80E-02

Output flows:

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	4,13E-04	0,00E+00	2,52E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Riga Birch Plywood – Your Sustainable Choice

Latvijas Finieris Group has established strict measures in order to guarantee that the production processes strive to minimize the impact on human health as well as the environment. In addition, we implement and support sustainable forest management systems which are beneficial to the environment and the surrounding societies.

We are a part of the Nordic region, which is a global benchmark of sustainability practices. We ensure energy efficient production, thereby minimizing the impact on the environment as much as possible, additionally securing that the source of the raw material is located nearby our mills and side-streams of the harvesting and production process are used fully. We are also active in the social dimension – as a responsible employer, integrating local economy into global value chain and involving our key stakeholders in the overall sustainability process.

The wood supply chain of Latvijas Finieris is certified according to world's leading sustainable forest management schemes confirming that our timber processing system, from logging to manufacture and delivery, meet internationally recognised sustainable forest management principles and our purchasing and manufacturing processes comply with the requirements of EU Timber Regulation Nr.955/2010. All our long-term supply partners manage their forests respecting all national laws and regulations and according to best sustainable forestry practices. Latvijas Finieris purchasing policy is that the company accepts roundwood exclusively from legal and verified sources – specialists from Latvijas Finieris make regular supply and supplier audits, in order to assure that they meet FSC or PEFC requirements.

Latvijas Finieris is also actively involved in forest management. In 1998 Latvijas Finieris founded a tree nursery that was one of the first in the country to commence the production of birch seedlings. Today, the total production of our nursery has reached 1.5 million saplings per year.

Based on national laws, EU directives and other international norms, Latvijas Finieris runs regular environmental risk assessments and continuously invests in more efficient technology to reduce impact on the environment, for example - the research and development of lignin-based glue, heat energy recovery and material and resource recycling in manufacturing. Latvijas Finieris Energy management systems are certified by Bureau Veritas as complying to ISO 50001. This certificate demonstrates that the company follows a systematic approach to achieving continual improvement in energy performance, including energy efficiency, security, use and consumption - thus confirming to customers, stakeholders and employees that the company continually reduces its energy use and greenhouse gas emissions.

Differences versus previous version of the EPD

Updated information regarding exporting countries and Sales Offices worldwide in the section "Description of the organisation".
Slight grammar and style corrections and changes in the text formatting are made on pages 3, 4, 7, 8, 11.

References

- General Programme Instructions of the International EPD® System. Version 3.01
- PCR, EPD International, 2019 - PCR for Wood and wood-based products for use in construction. C-PCR-006 (to PCR 2012:01), published by EPD International, 2019-12-20
- ISO 14025:2010 – Environmental labels and declarations - Type III environmental declarations - Principles and procedures
- ISO 14044:2006 - Environmental management - Life cycle assessment - Requirements and guidelines
- EN 15804:2012+A1:2013 - Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products
- ISO 21930:2007 - Sustainability in building construction - Environmental declaration of building products
- LCI/LCA Report - Background report for Eco Panel. Report number: LCA-report Sweco 2020-01

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